SEQUENCE LISTING

<110> Evotec NeuroSciences GmbH

<120> DIAGNOSTIC AND THERATPEUTIC USE OF A SULFOTRANSFERASE
      FOR NEURODEGENERATIVE DISEASES

<130> 060307us Me/FM

<140> PCT/EP2004/052353
<141> 2004-09-29

<160> 22

<170> PatentIn Ver. 2.1

<210> 1
<211> 284
<212> PRT
<213> Homo sapiens

<400> 1

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Ser Lys Tyr Phe Glu Phe His Gly Val Arg Leu Pro Pro Phe Cys Arg
                20                  25                  30

Gly Lys Met Glu Glu Ile Ala Asn Phe Pro Val Arg Pro Ser Asp Val
            35                  40                  45

Trp Ile Val Thr Tyr Pro Lys Ser Gly Thr Ser Leu Leu Gln Glu Val
        50                  55                  60

Val Tyr Leu Val Ser Gln Gly Ala Asp Pro Asp Glu Ile Gly Leu Met
 65              70                  75                  80

Asn Ile Asp Glu Gln Leu Pro Val Leu Glu Tyr Pro Gln Pro Gly Leu
                85                  90                  95

Asp Ile Ile Lys Glu Leu Thr Ser Pro Arg Leu Ile Lys Ser His Leu
            100                 105                 110

Pro Tyr Arg Phe Leu Pro Ser Asp Leu His Asn Gly Asp Ser Lys Val
            115                 120                 125

Ile Tyr Met Ala Arg Asn Pro Lys Asp Leu Val Val Ser Tyr Tyr Gln
        130                 135                 140

Phe His Arg Ser Leu Ile Arg Thr Met Ser Tyr Arg Gly Thr Phe Gln Glu
145                 150                 155                 160

Phe Cys Arg Arg Phe Met Asn Asp Lys Leu Gly Tyr Gly Ser Trp Phe
                165                 170                 175

Glu His Val Gln Glu Phe Trp Glu His Arg Met Asp Ser Asn Val Leu
            180                 185                 190

Phe Leu Lys Tyr Glu Asp Met His Arg Asp Leu Val Thr Met Val Glu
        195                 200                 205

Gln Leu Ala Arg Phe Leu Gly Val Ser Cys Asp Lys Ala Gln Leu Glu
    210                 215                 220
```

Ala Leu Thr Glu His Cys His Gln Leu Val Asp Gln Cys Cys Asn Ala
225   230   235   240

Glu Ala Leu Pro Val Gly Arg Gly Arg Val Gly Leu Trp Lys Asp Ile
                245   250   255

Phe Thr Val Ser Met Asn Glu Lys Phe Asp Leu Val Tyr Lys Gln Lys
                260   265   270

Met Gly Lys Cys Asp Leu Thr Phe Asp Phe Tyr Leu
            275   280

<210> 2
<211> 171
<212> PRT
<213> Homo sapiens

<400> 2
Met Ala Glu Ser Glu Ala Glu Thr Pro Ser Thr Pro Gly Glu Phe Glu
 1   5   10   15

Ser Lys Tyr Phe Glu Phe His Gly Val Arg Leu Pro Pro Phe Cys Arg
                20   25   30

Gly Lys Met Glu Glu Ile Ala Asn Phe Pro Val Arg Pro Ser Asp Val
            35   40   45

Trp Ile Val Thr Tyr Pro Lys Ser Val Gly Tyr Gly Ser Trp Phe Glu
    50   55   60

His Val Gln Glu Phe Trp Glu His Arg Met Asp Ser Asn Val Leu Phe
 65   70   75   80

Leu Lys Tyr Glu Asp Met His Arg Asp Leu Val Thr Met Val Glu Gln
                    85   90   95

Leu Ala Arg Phe Leu Gly Val Ser Cys Asp Lys Ala Gln Leu Glu Ala
            100   105   110

Leu Thr Glu His Cys His Gln Leu Val Asp Gln Cys Cys Asn Ala Glu
            115   120   125

Ala Leu Pro Val Gly Arg Gly Arg Val Gly Leu Trp Lys Asp Ile Phe
    130   135   140

Thr Val Ser Met Asn Glu Lys Phe Asp Leu Val Tyr Lys Gln Lys Met
145   150   155   160

Gly Lys Cys Asp Leu Thr Phe Asp Phe Tyr Leu
                165   170

<210> 3
<211> 2419
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:nucleotide
      sequence of human SULT4A1 cDNA, splice variant 1

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<400> 3
gcgacggcga cggcggcggc atggcggaga gcgaggccga gaccccccagc accccggggg 60
agttcgagag caagtacttc gagttccatg gcgtgcggct gccgcccttc tgccgcggga 120
agatggagga gatcgccaac ttcccggtgc ggccagcga cgtgtggatc gtcacctacc 180
ccaagtccgt gaccagcttg ctgcaggagg tggtctactt ggtgagccag ggcgctgacc 240
ccgatgagat cgggttgatg aacatcgacg agcagctccc ggtcctggag tacccacagg 300
cgggcctgga catcatcaag gaactgacct ctcccgcct catcaagagc cacctgccct 360
accgctttct gccctctgac ctccacaatg gagactccaa ggtcatctat atggctcgca 420
accccaagga tctggtggtg tcttattatc agttccaccg ctctctgcgg accatgagct 480
accgaggcac ctttcaagaa ttctgccgga ggtttatgaa tgataagctg ggctacggct 540
cctggtttga gcacgtgcag gagttctggg agcaccgcat ggactcgaac gtgcttttc 600
tcaagtatga agacatgcat cgggacctgg tgacgatggt ggagcagctg gccagattcc 660
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taatggggag aagcgtggcc aggcaggtgg cacgtggcat cgcatggtgg gctcggcagc 2220
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aaaaaaaaaa aaaaaaaaa                                        2419
```

```
<210> 4
<211> 2080
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:nucleotide
      sequence of human SULT4A1 cDNA, splice variant 2

<400> 4
gcgacggcga cggcggcggc atggcggaga gcgaggccga gaccccccagc accccggggg 60
agttcgagag caagtacttc gagttccatg gcgtgcggct gccgcccttc tgccgcggga 120
agatggagga gatcgccaac ttcccggtgc ggccagcga cgtgtggatc gtcacctacc 180
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tggagcagct ggccagattc ctggggggtg tcctgtgaca aggcccagct ggaagccctg 360
cggagcactg ccaccagctg gtggaccagt gctgcaacga gaggccctgc cccgtgggcc 420
ggggaagagt tgggctgtgg aaggacatct tcaccgtctc catgaatgag aagtttgact 480
tggtgtataa acagaagatg ggaaagtgtg acctcacgtt tgactttat ttataataac 540
```

```
agaaacaaca acctgcatgc tcacaatacc cagacagtct actagccaaa agtcctgtat 600
gcattcattt attccttgct ggacaaaactc tggaagcagc gtgtgaaaca gcggggggaag 660
ggaagagcgg cgtgagcgga gggagtgtga tgattcccaa ccgaagcagc tgtctcgcct 720
ttagaacgtg cagcctcctcc atgtctgatt acaaacagtc tccacattgc agttccaatg 780
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aataaaagtt catttccaag gggaatcagg agcgagccac acccgaatgg tagaaagatc 960
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cttggttctg agatagtggt gagaacagag gatgagttgg gtctgttggg gggaatctgg 1080
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gcaggtggga gtctaatgca gtcaggagca tttgcatgca gtgggtggag agtcgggccac 1320
caaaggaccg agttgcgctc ggaatttgag ctgaattcca cagccttact ttgtttcctg 1380
aagtgatagc ctactaatgc tggcaagcag atgcttaata gtaaatttct aaaatccccg 1440
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tgcgagtgta gccctgtttc actcggatca ggttggcacg gccgcctgcg tgtctgtcca 1560
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ttttctcacc cacattcgct gaagcgatgg agagtcgggg gccagtagcc agccaacccc 1680
gtggggaccg gggttgtctg tcatttatgt ggctggaaag cacccaaagt ggtggtcaag 1740
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aaatttcatt tatattttc tatttttagt actgtatgga tgttactgag cactacacat 1980
gatccttctg tgcttgcttg catctttaat aaagacatgt tcccggcgtt gcaaaaaaaa 2040
aaaaaaaaa aaaaaaaaa aaaaaaaaa aaaaaaaaa                        2080
```

<210> 5
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:nucleotide
      sequence of human SULT4A1 cDNA fragment

<400> 5
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gattgcatct ttaataaaga catgttcccg gc                                 32
```

<210> 6
<211> 855
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:coding sequence
      of the human SULT4A1 gene

<400> 6
```
atggcggaga gcgaggccga gacccccagc accccggggg agttcgagag caagtacttc 60
gagttccatg gcgtgcggct gccgcccttc tgccgcggga agatggagga gatcgccaac 120
ttcccggtgc ggcccagcga cgtgtggatc gtcacctacc ccaagtccgag caccagcttg 180
ctgcaggagg tggtctactt ggtgagccag ggcgctgacc ccgatgagat cggcttgatg 240
aacatcgacg agcagctccc ggtcctggag taccccagc gggcctgga catcatcaag 300
gaactgacct ctccccgcct catcaagagc cacctgccct accgctttct gccctctgac 360
ctccacaatg gagactccaa ggtcatctat atggcgcca accccaagga tctggtgggtg 420
tcttattatc agttccaccg ctctctgcgg accatgagct accgaggcac cttcaagaa 480
ttctgccgga ggtttatgaa tgataagctg ggctacggct cctggtttga gcacgtgcag 540
gagttctggg agcaccgcat ggactcgaac gtgctttttc tcaagtatga agacatgcat 600
cgggacctgg tgacgatggt ggagcagctg gccagattcc tggggggtgtc ctgtgacaag 660
gcccagctgg aagccctgac ggagcactgc ggtggaccagtg ctgcaacgct 720
```

```
gaggccctgc cgtgggccg gggaagagtt gggctgtggga aggacatctt caccgtctcc 780
atgaatgaga agtttgactt ggtgtataaa cagaagatgg gaaagtgtga cctcacgttt 840
gactttttatt tataa                                                855
```

<210> 7
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human SULT4A1 splice variant 1 and splice variant
      2 gene

<400> 7
```
caaagtggtg gtcaggaggg t                                          21
```

<210> 8
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human SULT4A1 splice variant 1 and splice variant
      2 gene

<400> 8
```
ccgtttcaaa tacagcacca ag                                         22
```

<210> 9
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human SULT4A1 splice variant 1 gene

<400> 9
```
ctgaccccga tgagatcg                                              18
```

<210> 10
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human SULT4A1 splice variant 1 gene

<400> 10
```
ggcaggtggc tcttgatga                                             19
```

<210> 11
<211> 19
<212> DNA
<213> Artificial Sequence

```
<220>
<223> Description of Artificial Sequence:primer for the
      human SULT4A1 splice variant 2 gene

<400> 11
tcacctaccc caagtccgt                                              19


<210> 12
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human SULT4A1 splice variant 2 gene

<400> 12
ttcatacttg agaaaaagca cgt                                         23


<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human cyclophilin B gene

<400> 13
actgaagcac tacgggcctg                                             20


<210> 14
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human cyclophilin B gene

<400> 14
agccgttggt gtctttgcc                                              19


<210> 15
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human ribosomal protein S9 gene

<400> 15
ggtcaaattt accctggcca                                             20


<210> 16
<211> 22
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human ribosomal protein S9 gene

<400> 16
tctcatcaag cgtcagcagt tc   22

<210> 17
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human beta actin gene

<400> 17
tggaacggtg aaggtgaca   19

<210> 18
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human beta actin gene

<400> 18
ggcaagggac ttcctgtaa   19

<210> 19
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human GAPDH gene

<400> 19
cgtcatgggt gtgaaccatg   20

<210> 20
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human GAPDH gene

<400> 20
gctaagcagt tggtggtgca g   21

<210> 21
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human transferrin receptor TRR gene

<400> 21
gtcgctggtc agttcgtgat t   21

<210> 22
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer for the
      human transferrin receptor TRR gene

<400> 22
agcagttggc tgttgtacct ctc   23

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